



# Flood Safety Awareness Week

## March 16-22, 2014



[www.floodsafety.noaa.gov](http://www.floodsafety.noaa.gov)

[www.floodsmart.gov](http://www.floodsmart.gov)

Flood Safety Awareness Week is March 16-22! [More information...](#)



Flood waters reach mailbox height in a neighborhood along the Red River in Minnesota. (photo credit: FEMA)



### Flooding Resources

- Flood Safety
- Turn Around Don't Drown
- Flood/Safety Awareness Week
- State Flood Information
- Flood Hazards
- NWS Flood Products
- Forecasts and Observations
- Education and Outreach Materials
- Partner Agencies

Flooding is a coast to coast threat to the United States and its territories nearly every day of the year. This page is designed to teach you how to stay safe in a flood event. If you know what to do before, during, and after a flood you can increase your chances of survival. Here you will find an interactive flood map, information describing the different types of flooding, educational material, and resources on how the National Weather Service keeps you aware of potentially dangerous flooding situations.



Call toll free: 1-888-379-9531 or have us call you

Search FloodSmart.gov

### HOME

#### FLOODING & FLOOD RISKS

ABOUT THE NATIONAL FLOOD INSURANCE PROGRAM

#### RESIDENTIAL COVERAGE

#### COMMERCIAL COVERAGE

#### PREPARATION & RECOVERY

#### RESOURCES

- Agent Site
- Agent Locator
- Biggert-Waters Reform Act of 2012
- Community Rating System
- Community Resources
- File Your Claim
- Frequently Asked Questions
- Glossary
- Flood Facts
- Media Resources
- Toolkits
- Email Updates

### LATEST NEWS

Learn more about how properties and policies might be affected by the Biggert-Waters Flood Insurance Reform Act of 2012.

Find out more about the Preferred Risk Policy Eligibility Extension. [Learn More](#)

Typically, there is a 30-day waiting period on new flood insurance policies.

## Winter Rainy Season Is Here. Are You Ready?

Heavy rains during the winter months can cause catastrophic flooding in many areas of the country.

[LEARN MORE](#)

[Winter Rainy Season](#) [BW-12](#) [New Flood Maps](#) [Video Testimonials](#)



**GET COVERAGE FOR AS LOW AS \$129 PER YEAR**

Find out about our Preferred Risk Policy for homes in moderate-to-low risk areas.

[LEARN MORE](#)



**WHAT COULD FLOODING COST ME?**

This interactive tool shows the cost of a flood to your home, inch-by-inch.

[LEARN MORE](#)

### One-Step Flood Risk Profile

#### HOW CAN I GET COVERED?

- Rate your risk
- Estimate your premiums
- Find an agent

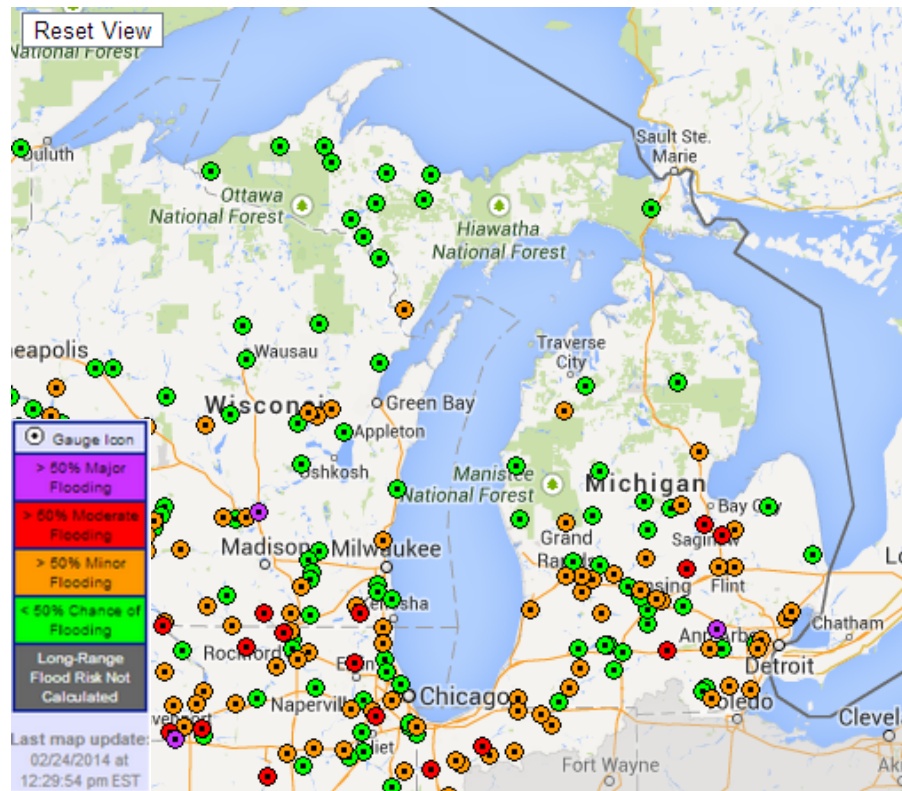
Address:



# Michigan Spring Flood Outlook

March 17, 2014 - 1000 AM

Bookmark this map at - <http://go.usa.gov/BFT4>



- Latest on Current Conditions
- River Forecast Model Projections
- Forecast Outlook for Spring
- Updates from Around the State
- Best and Worst Case Scenarios

A PDF Version of these slides with Clickable Links to shown information can be found at the following page

[www.weather.gov/grr/webinars](http://www.weather.gov/grr/webinars)



# Thank You for Joining Today

## **Despite a Couple of Mostly Helpful Weather Weeks Risk for River Flooding Remains Much Higher Than Usual**

Despite some slow melting of Snow and Ice recently  
We are still primed for an Active Flood Season the next Month or so

We Need to Continue to Avoid Rapid Melting and Heavy Rain

## **We continue a general 40-90% Risk for River Flooding Typical Year we have a 5-20% Risk**

A higher risk for flooding does not mean we are predicting record flooding  
Some flooding is likely, we are not here to say widespread significant flooding is certain



# Ice Jam Potential

We Are Seeing More Open Water on Rivers, Streams  
No Ice = No Ice Jam Risk

- Losing Ice does not remove flood threat for the spring, just eliminates ice jamming
- Great Lakes could prevent the escape of any flowing river ice - Offshore winds help by pushing ice to midlake and may open channels
- Breakup or movement of ice means jamming and flooding could develop quickly...ice jams on rivers can result in unpredictable rapid rises in rivers
- Please Share with the NWS immediately if you see ice breakup or movement
- Fast moving water combined with ice poses a very serious threat to rescue operations and first responders





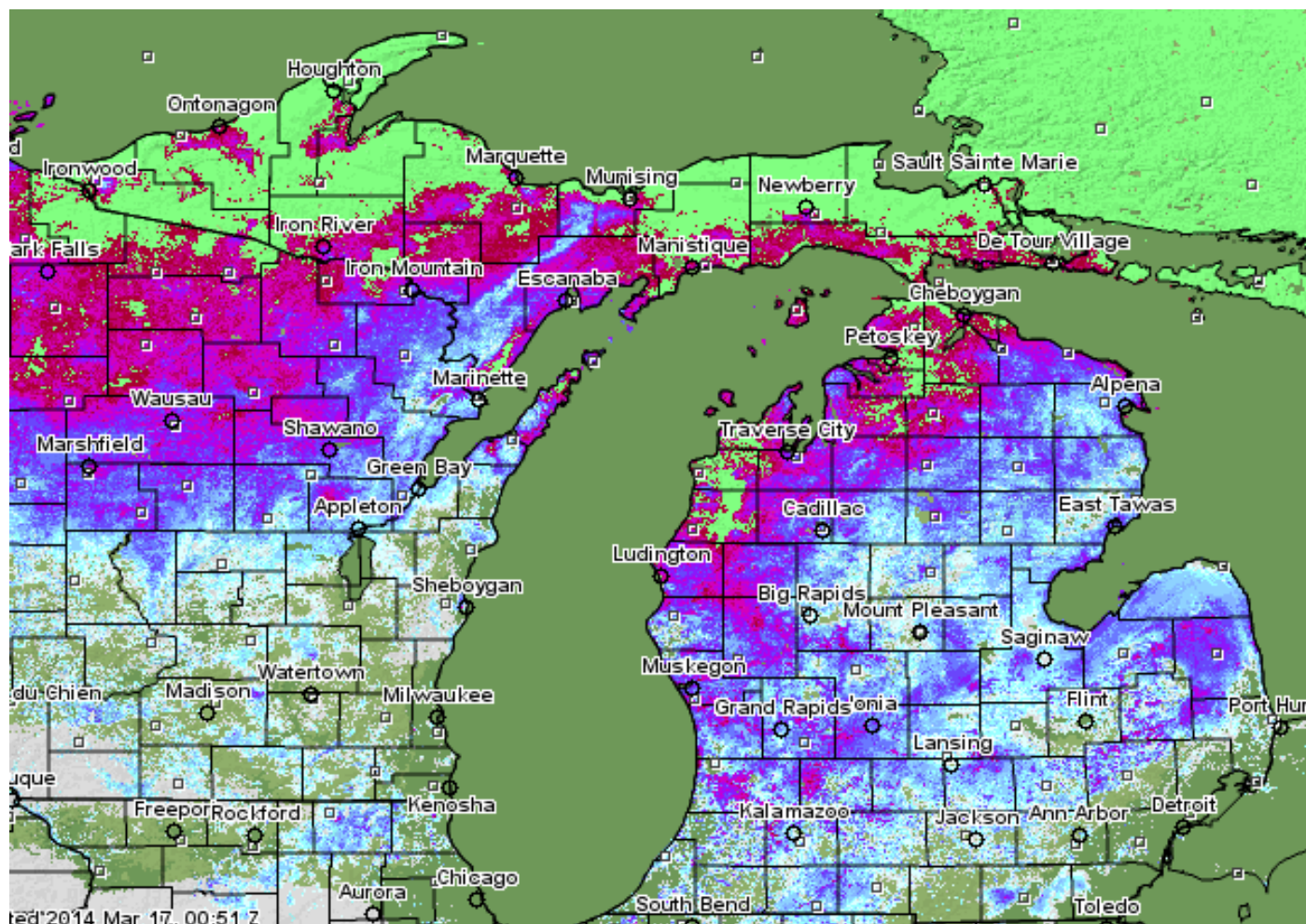
# Latest on Current Snow Pack

<http://go.usa.gov/BFwC>

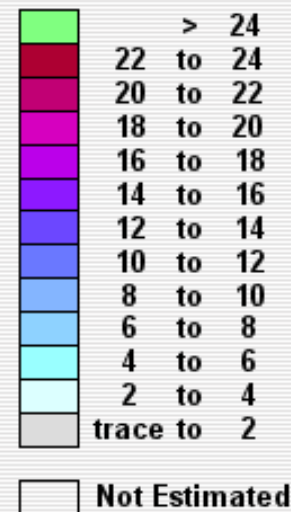
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Modeled Snow Depth - March 16, 2014



Inches of depth



ted'2014 Mar 17, 00:51 Z



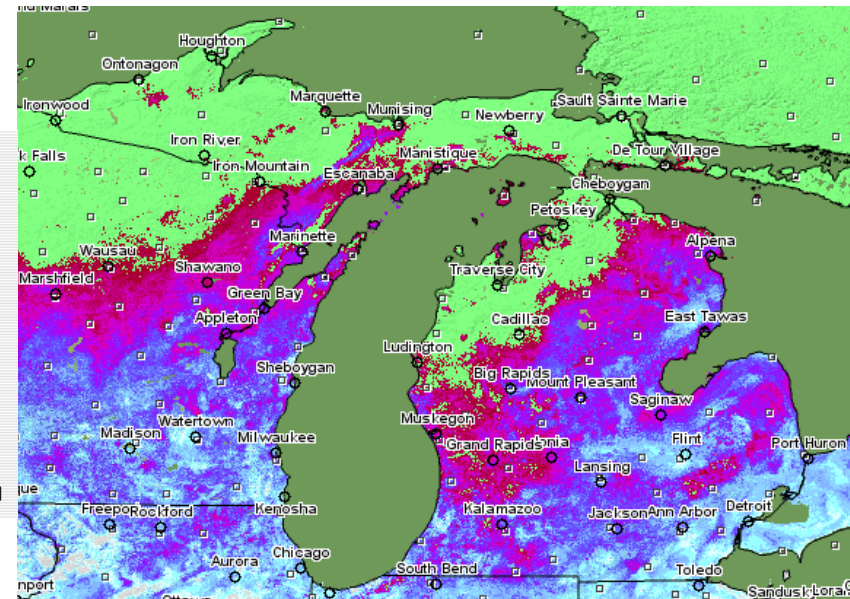
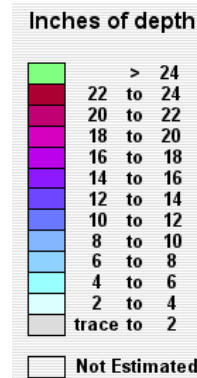
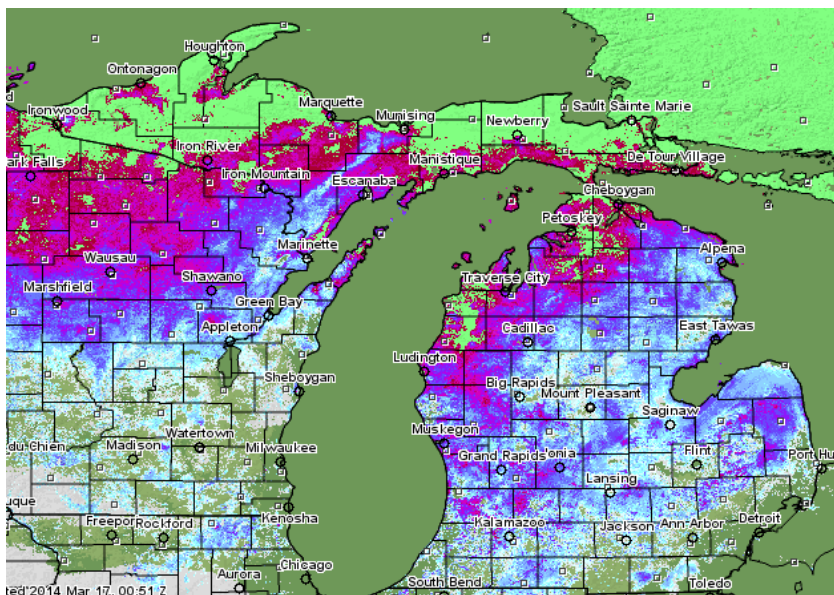
# Snow Pack

## Some Changes from Last Month - Still High

Modeled Snow Depth

March 16, 2014

February 25, 2014







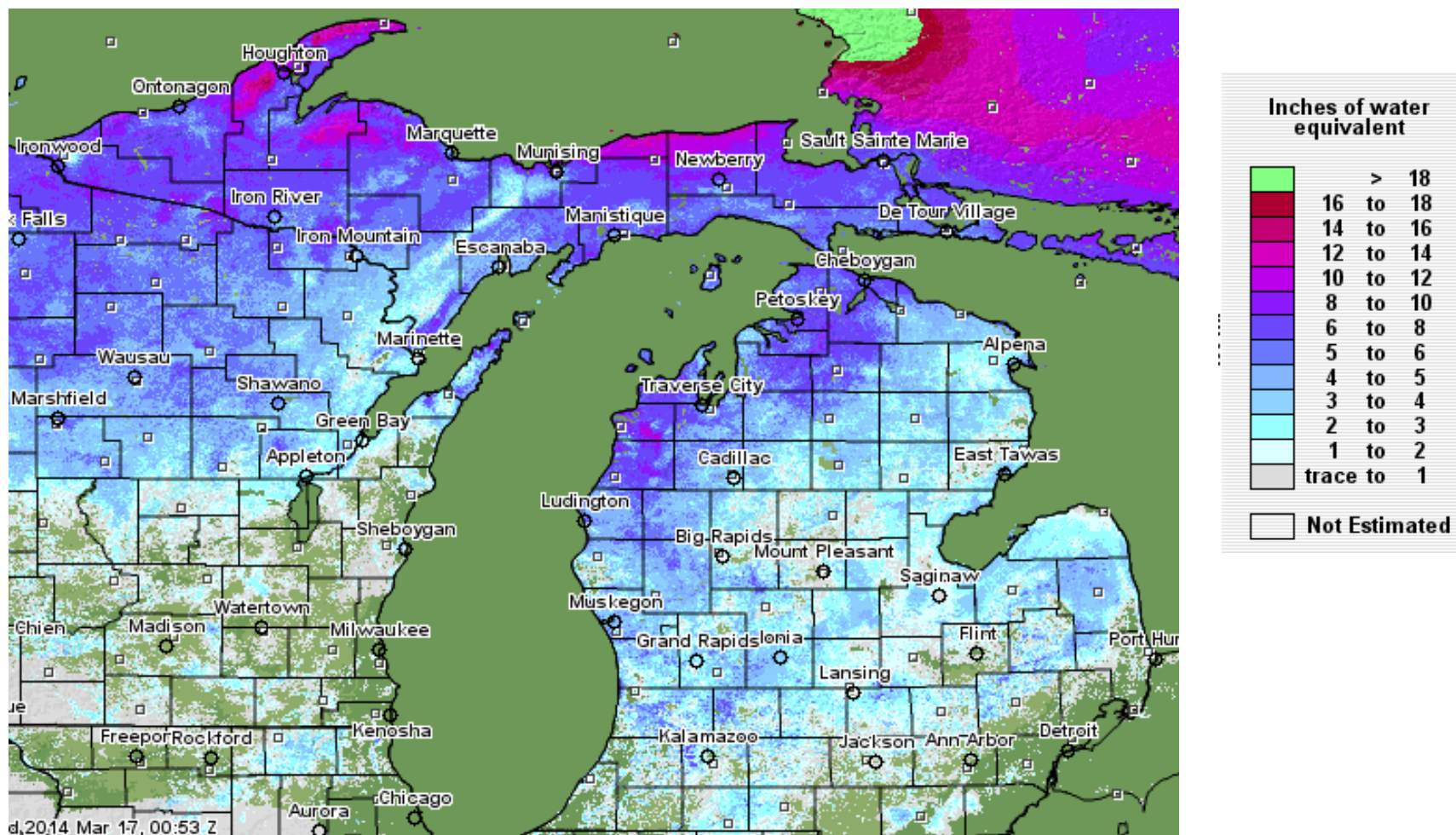
# Latest on Water in the Snow Pack

<http://go.usa.gov/BFvP>

On Left Side of Page: Change Date, Click 'Redraw Map' for latest info)



## Modeled Snow Water Equivalent - March 16, 2014





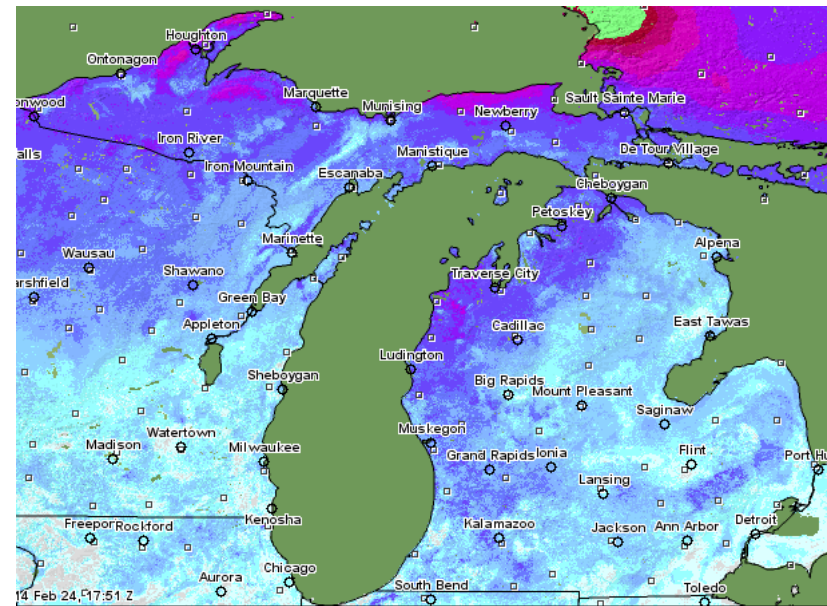
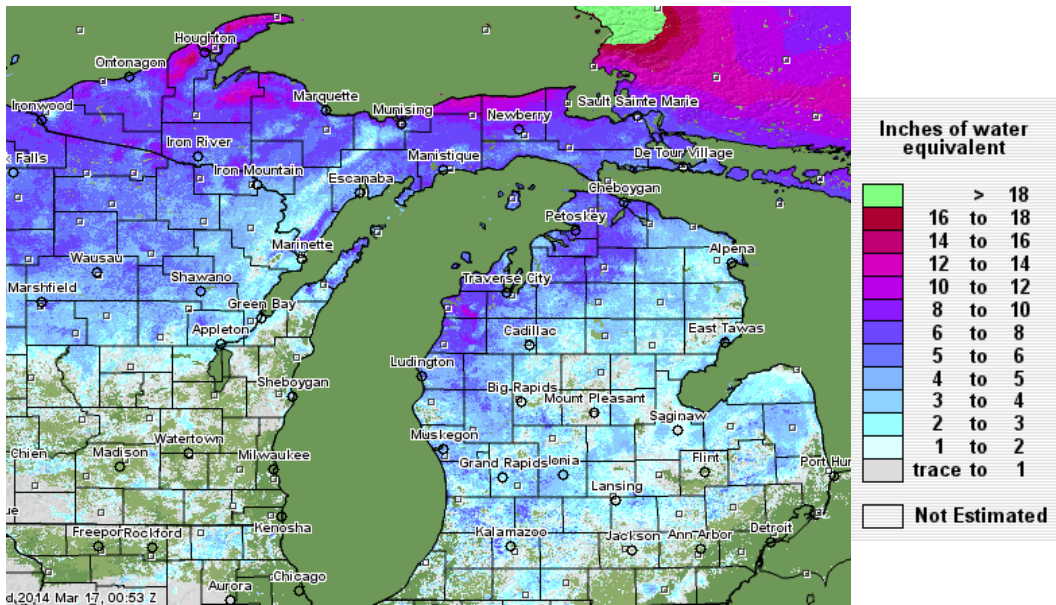
# Water in the Snow Pack

## Some Changes from Last Month - Still High

Modeled Snow Water Equivalent

March 16, 2014

February 25, 2014







# **Outlook for the Next Two Weeks**

## **Transition to Warmer and Wetter Weather Should Start to Occur Very Soon**

Very Few Days Expected with Average Temperature Below 20 degrees  
Meaning ice on rivers should not typically grow in depth

### **Rain/Snow March 19-21**

Around one-half inch of rain or less - Will Add to River Levels, Snow Pack  
Not expected to cause significant issues at this time - some minor flooding possible  
Greatest Rain Amounts Expected: Southern Lower Michigan

## **Additional Rainfall the Next Two Weeks Looks Minimal**

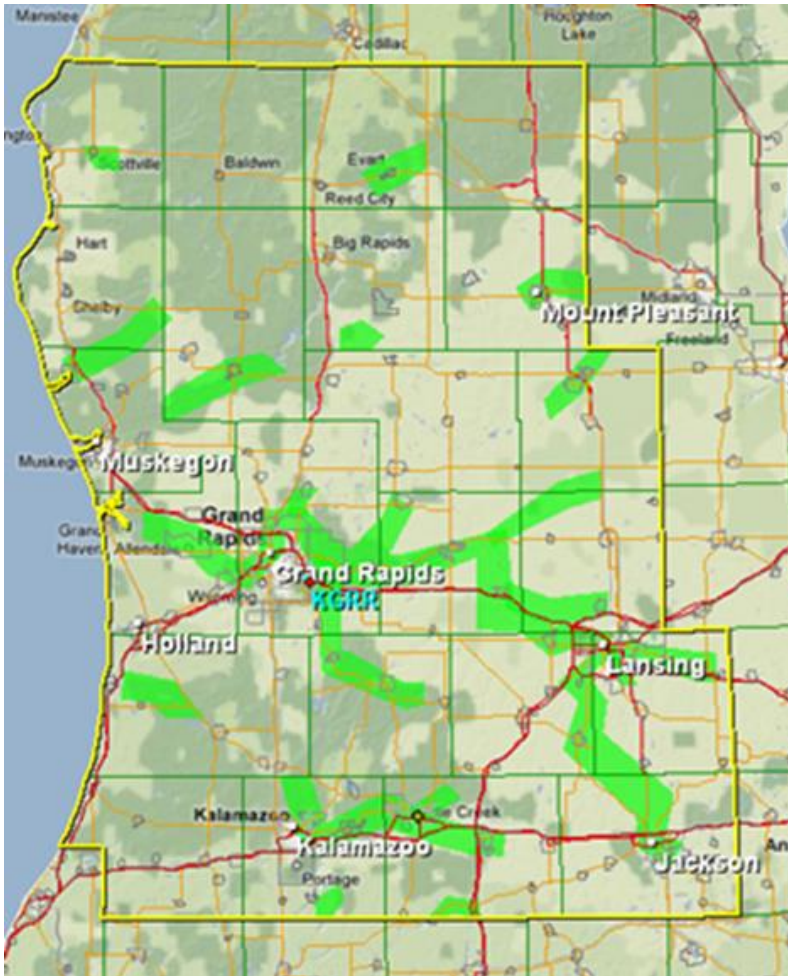
**Snowpack Will Absorb Very Little Water  
Ground Will Absorb Some - But Not Much**



# If River Flood Warnings Are Issued

## Some Changes in Warning Maps for Michigan this Spring

### Example of River Flood Warnings



- More Specific Mapping Than Before
  - Focus Closer to Rivers
  - No Longer Light Up Entire County
- Does Not Mean Entire Area Will Flood
  - Not Inundation Maps
- County Names Still Listed
- Warning Information Same As Before
  - Current Stage
  - Forecast Crest and Time
  - Typical Impacts Listed



# Flood Terminology

## Major Flooding

Extensive Inundation - Road, Structure, Communities  
Evacuations

Movement of Property to Higher Elevations

## Moderate Flooding

Some Inundation - Road, Structure, Communities  
Possible Evacuations

Movement of Property to Higher Elevations

## Minor Flooding

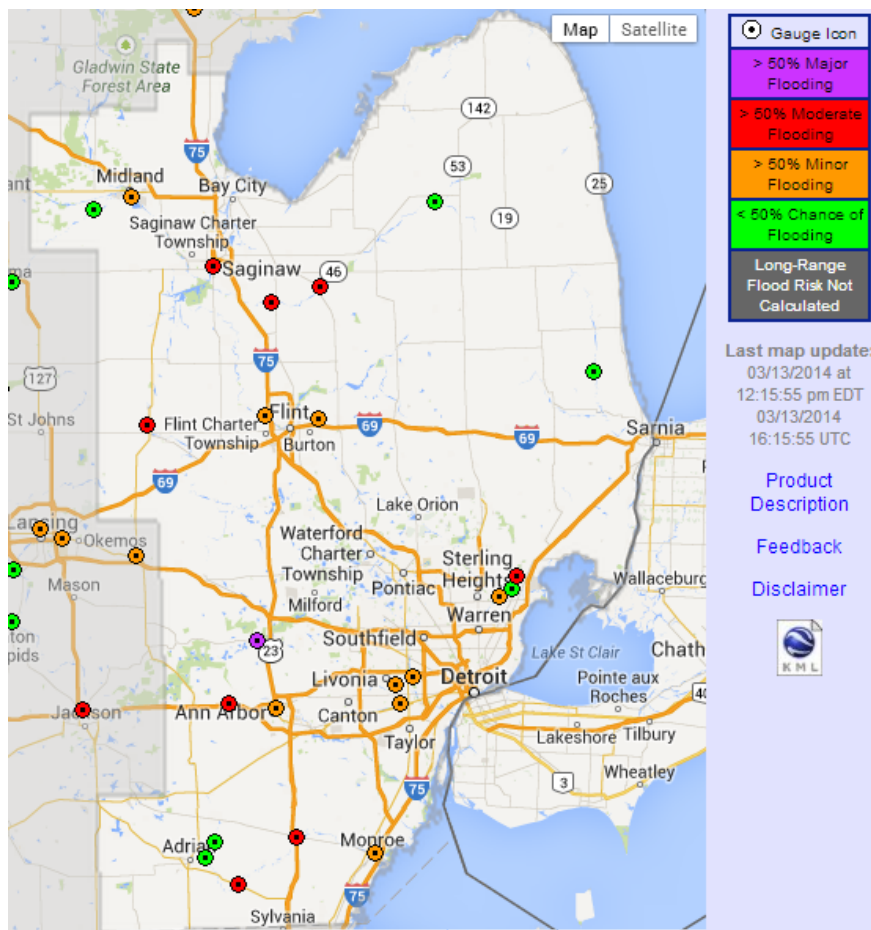
Minimal Property Damage,  
Public Inconvenience





# Southeast Lower

Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



**Amount of Snow On the Ground  
Above Normal**

**Current Water Available  
in the Snow on the Ground  
Much Above Normal**

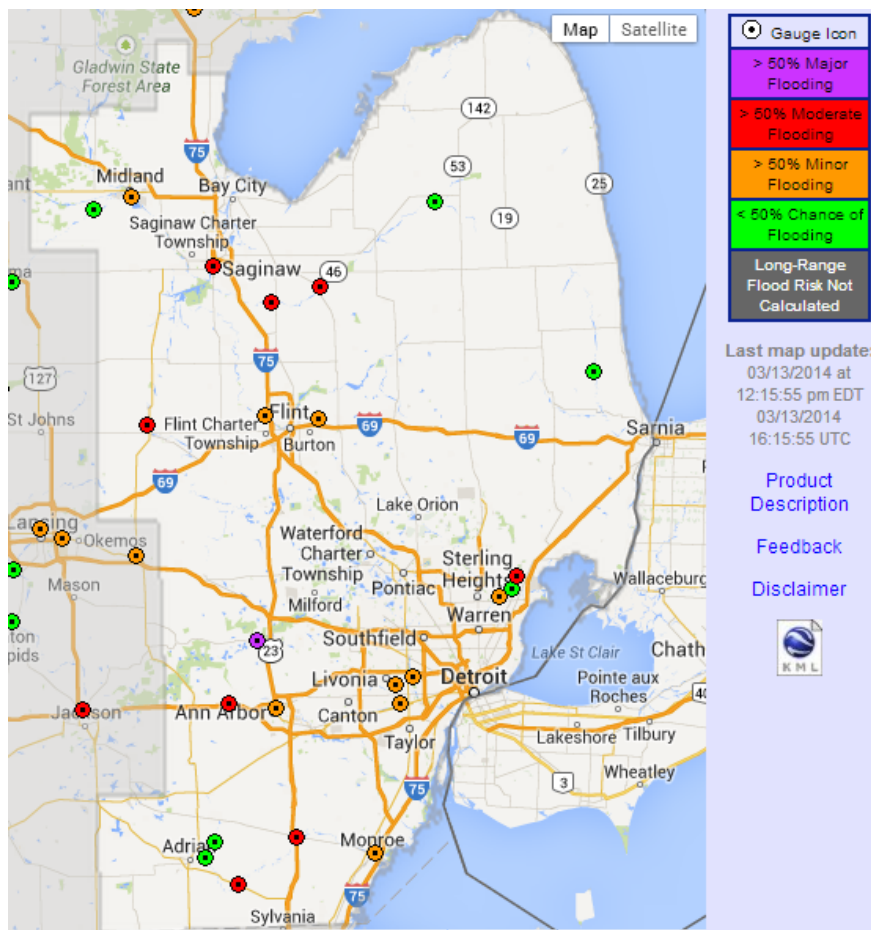
**Depth of Ground Frost  
Above Normal**

**Amount of Soil Moisture in Ground  
Above Normal**



# Southeast Lower

Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



**Locations Most Vulnerable for  
Spring 2014 to..**

## Major Flooding

Huron River Basin

Black River Basin

Threat of Ice Jams Lessening

## Moderate Flooding

Saginaw River Drainage

(Tittabawassee, Cass, Shiawassee,  
Flint and Saginaw Rivers)

River Raisin Basin

## Minor Flooding

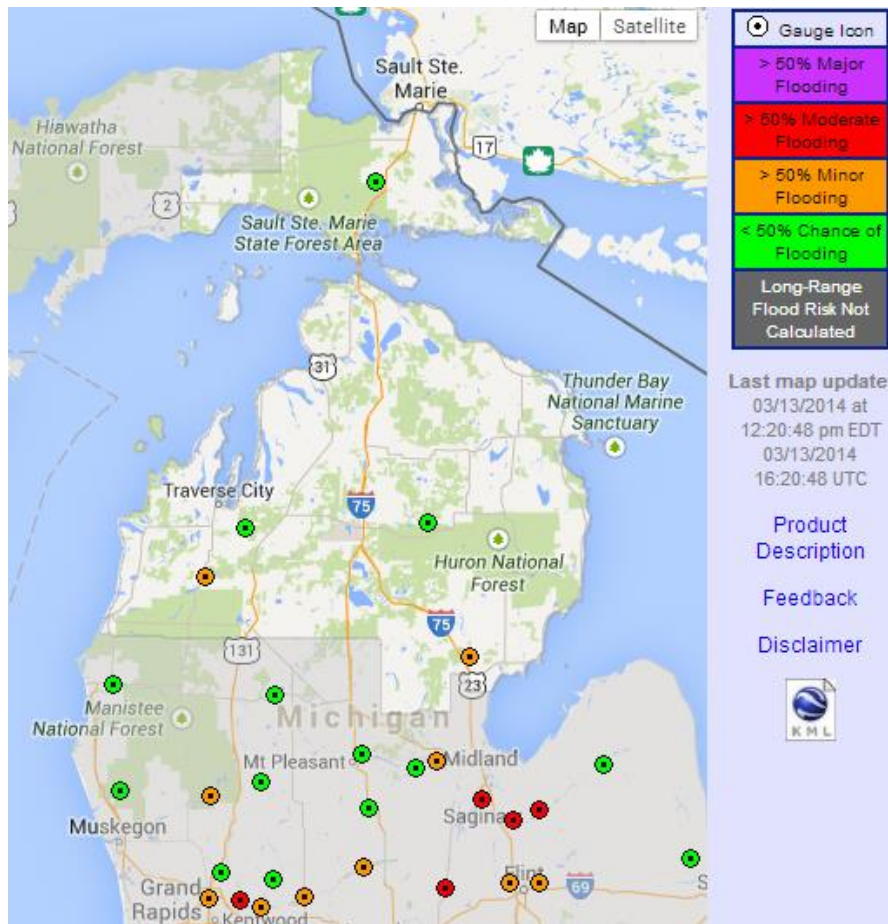
Rouge and Clinton River Basins



# Northern Lower - Eastern U.P.



Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



**Amount of Snow On the Ground**  
Near to Above Normal (Eastern U.P./  
Northwest L.P.)

**Current Water Available**  
**in the Snow on the Ground**  
Near to Above Normal (Especially Eastern  
U.P. and Northwest L.P.)

**Depth of Ground Frost**  
Above Normal

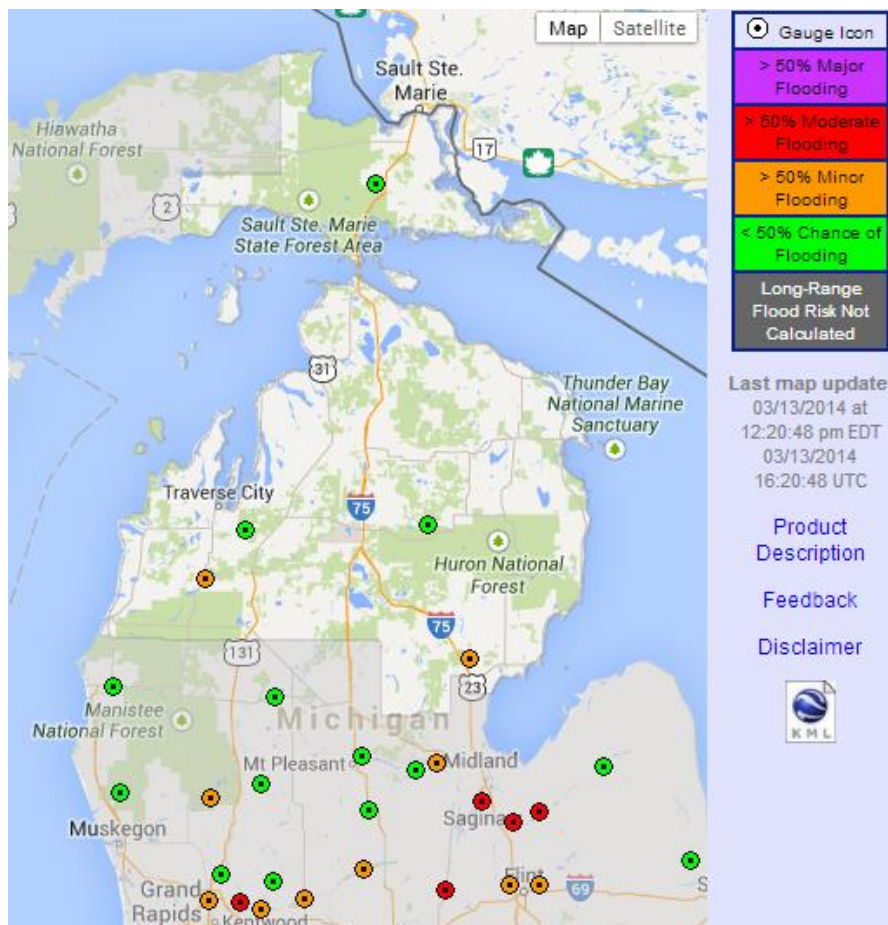
**Amount of Soil Moisture in Ground**  
Above to Well Above Normal





# Northern Lower - Eastern U.P.

Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



**Locations Most Vulnerable for  
Spring 2014 to...**

**Major Flooding**

Ice Jams Increase This Risk

**Moderate Flooding**

Manistee River Basin

**Minor Flooding**

Pine River Basin

Thunder Bay River Basin

Rifle River Basin

Boardman River Basin

Au Sable River Basin



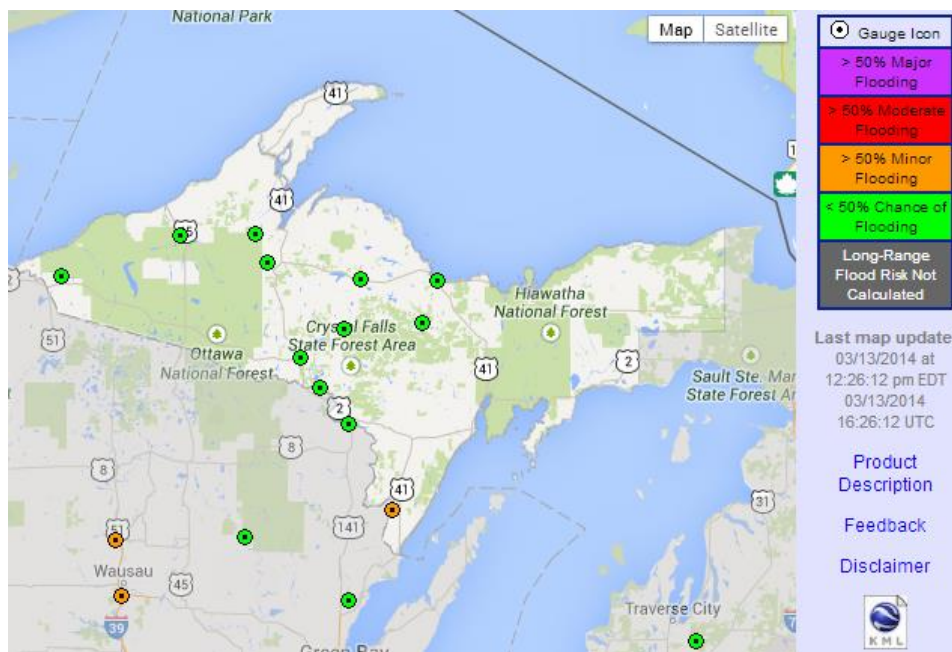
# Western/Central U.P.

## No Immediate Flood Concerns

Some Concern for April pending warm-up

## Spring Thaw Much Later than Lower Peninsula

Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



**Amount of Snow On the Ground**  
20" - 55" - Near to Above Normal

**Current Water Available  
in the Snow on the Ground**  
3" - 10" - 100-140% of Normal

**Depth of Ground Frost**  
Well Above Normal (Winter '93-'94)

**Amount of Soil Moisture in Ground**  
Above Normal



# Far Southwest Lower

**Amount of Snow On the Ground  
Above Normal**

Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



**Current Water Available  
in the Snow on the Ground  
Above Normal**

**Depth of Ground Frost  
Above Normal**

**Amount of Soil Moisture in Ground  
Above Normal**





# Far Southwest Lower

Locations Most Vulnerable for  
Spring 2014 to..

Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



**Major Flooding**

Threat of Ice Jams Lessening

**Moderate Flooding**

St. Joseph River Basin

**Minor Flooding**

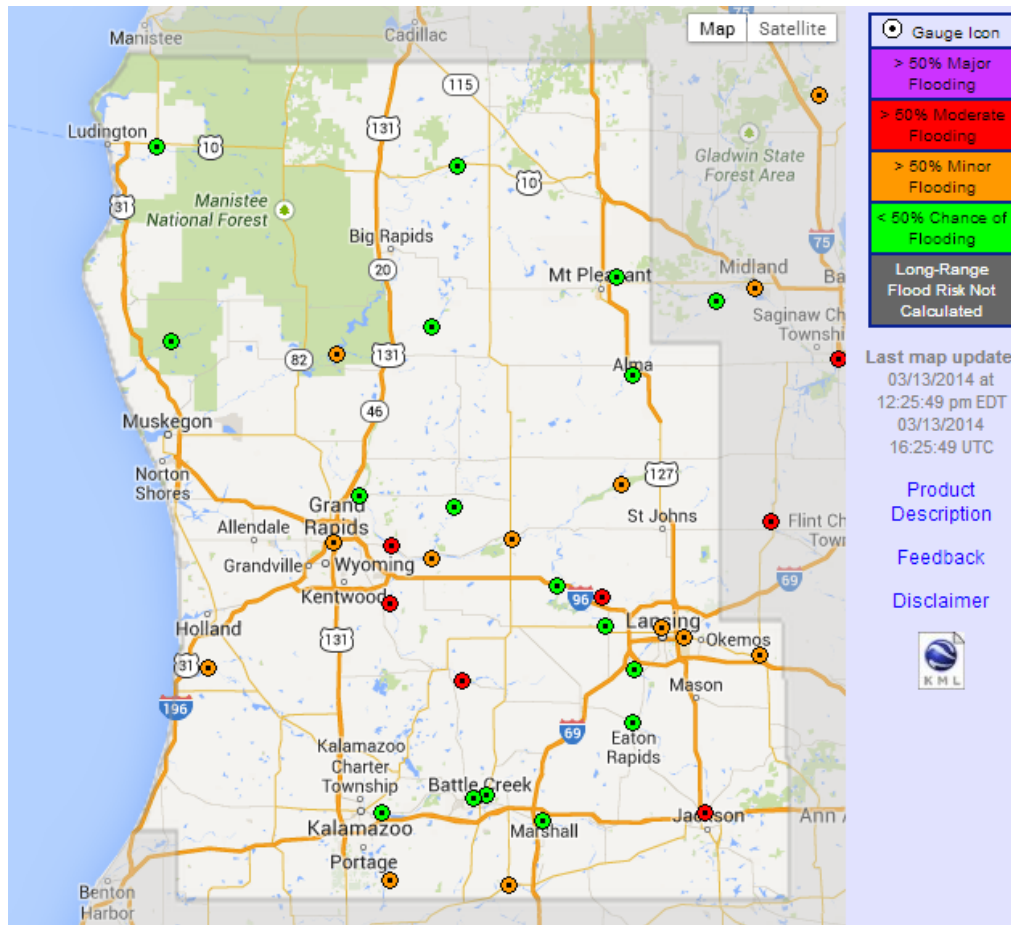
None



# Southwest Lower



Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



**Amount of Snow On the Ground  
Above Normal**

**Current Water Available  
in the Snow on the Ground  
Above Normal**

**Depth of Ground Frost  
Near Normal**

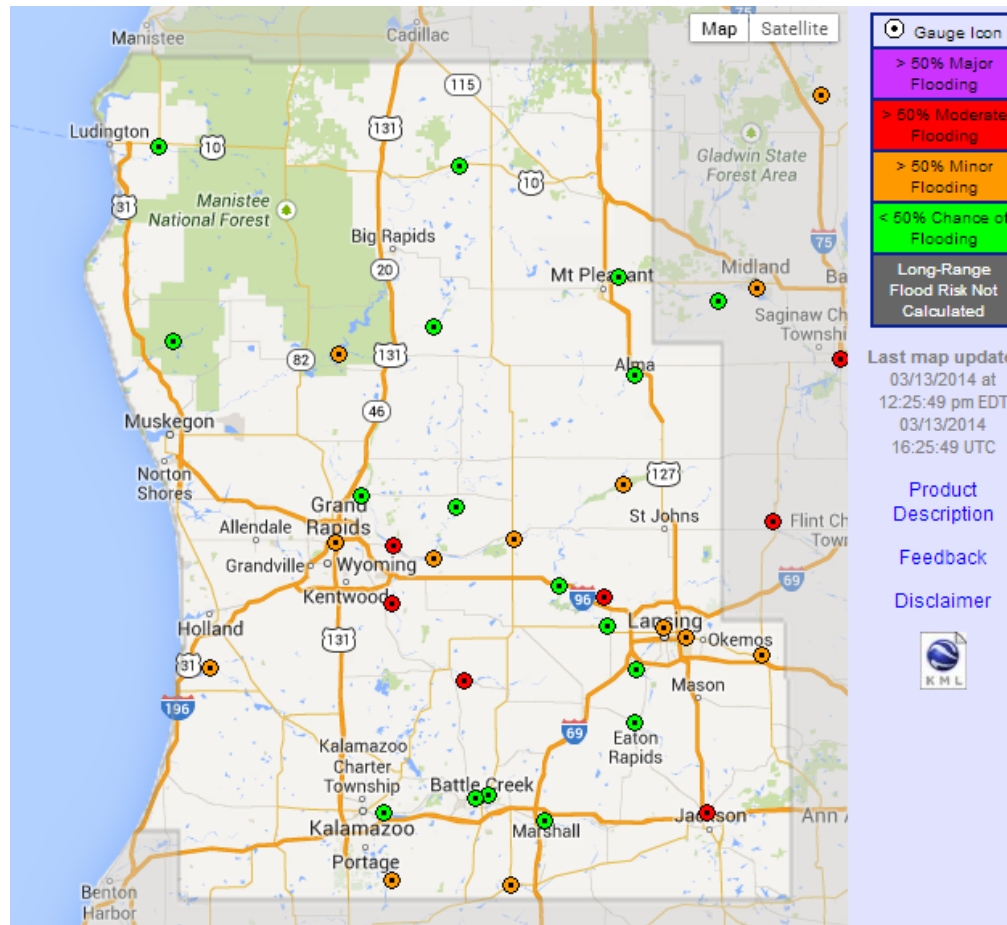
**Amount of Soil Moisture in Ground  
Above Normal**



# Southwest Lower



Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



**Locations Most Vulnerable for  
Spring 2014 to..**

**Major Flooding**

Threat of Ice Jams Lessening

**Moderate Flooding**

Upper Grand River Basin  
Red Cedar River

**Minor Flooding**

Muskegon River Basin  
Lower Grand River Basin  
Kalamazoo River Basin





# Best Case Scenarios



## Would Help Lessen Flood Threat If...

- We continue to see cool temperatures with plenty of sunshine
- Slow Snow Melt with no rain - Gradual Warming with periods Below Freezing
- Spaced Out Smaller Rainfall Events - Allowing Drainage to Occur
- Rivers being free and clear of ice before any big rain event or rapid melting



# Worst Case Scenarios



## Would Increase Flood Threat If...

- Significant Additional Wet Snow Events Occur
- Quick Change from Cold to Very Warm and Wet Pattern
- Significant Intense Rainfall Happening at Once or Multiple Times (like April 2013)
- Heavy Rainfall Occurs Across Entire Basins - especially the Headwaters
- Rapid Snow Melt - Long Time Well Above Freezing with Very Warm Days (50+)
- Combination of Lots of Rainfall and Rapid Snow Melt before Ice is off the Rivers
- Quick Breakage and Release of thick River Ice



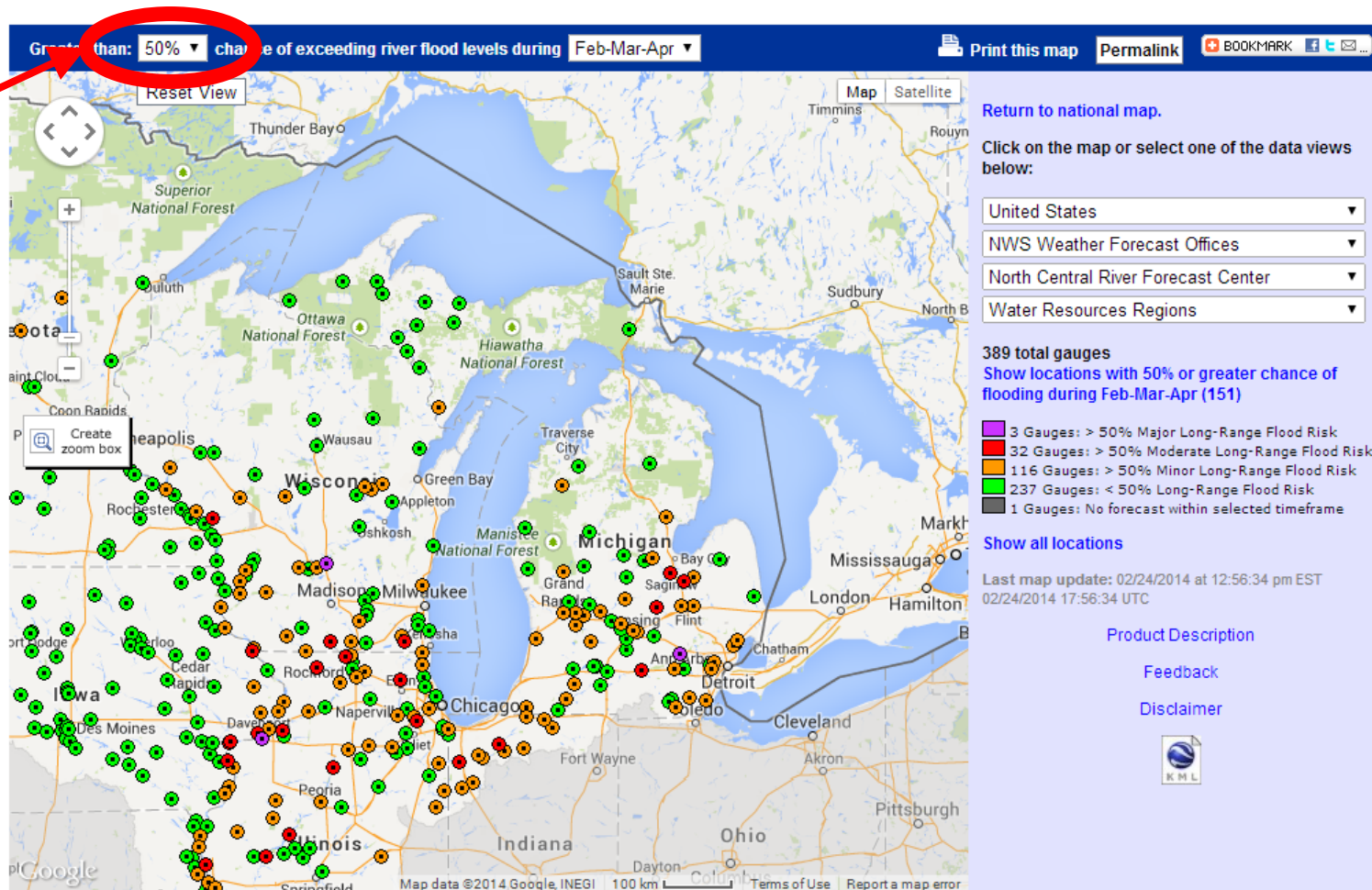
# Monitoring the Latest Flood Risk

## Map Detailing 50% Chance of Exceeding Flood Stage

<http://go.usa.gov/BFT4>

Can see other percentages

Including...  
25%, 75%, 95%





# In Summary...

## Upper Peninsula

No Immediate Flood Concerns

Some Concern for early-mid April pending warm-up

## Lower Peninsula

Moderate to High Risk for River Flooding This Spring

## Keep an Eye Out for...

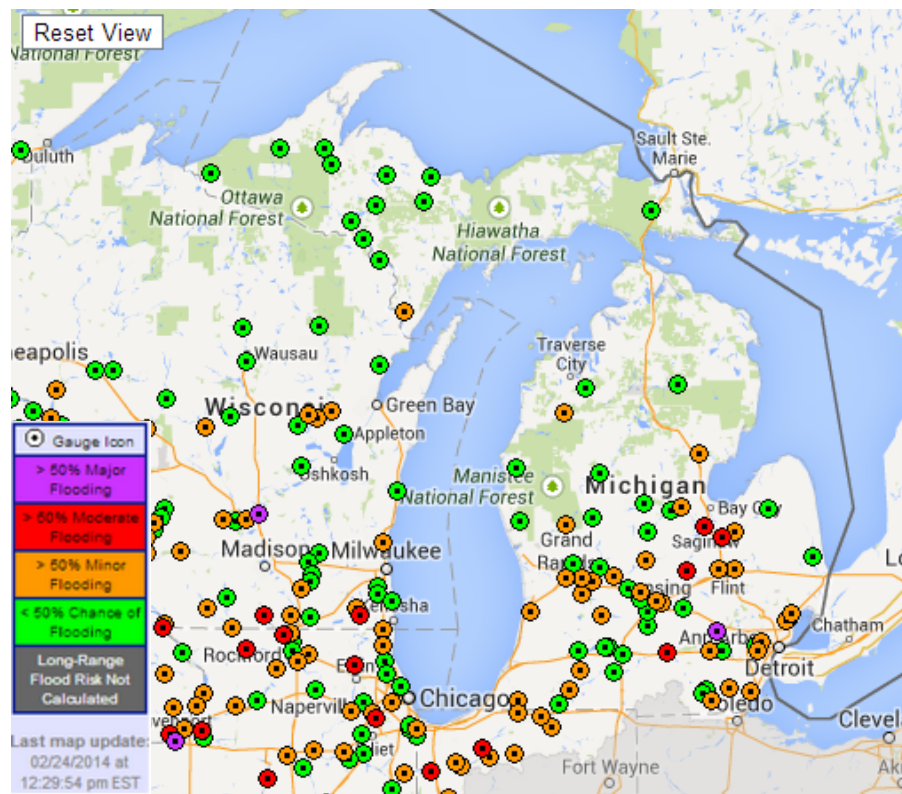
Lengthy Warm-ups and Significant Rainfall  
Flowing or Quick Breakup of River Ice





# No Additional Outlook Webinars Planned At This Time

Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



## Local/State Webinars Will Be Conducted As Needed to Address Flooding Concerns

A PDF Version of these slides with Clickable Links to  
shown information can be found at the following page

[www.weather.gov/grr/webinars](http://www.weather.gov/grr/webinars)

Bookmark this map at - <http://go.usa.gov/BFT4>





# Any Questions...

Justin Titus or Matt Zika  
Marquette, MI  
906-475-5782



John Boris or Jim Keysor  
Gaylord, MI  
989-731-3384

Danny Costello ext 493  
Rich Pollman ext 726  
Detroit, MI  
248-625-3309

Mark Walton ext 493  
Jim Maczko ext 726  
Grand Rapids, MI  
616-949-0643

Michael Rehbein ext 493  
Michael Lewis ext 726  
Northern Indiana  
574-834-1104

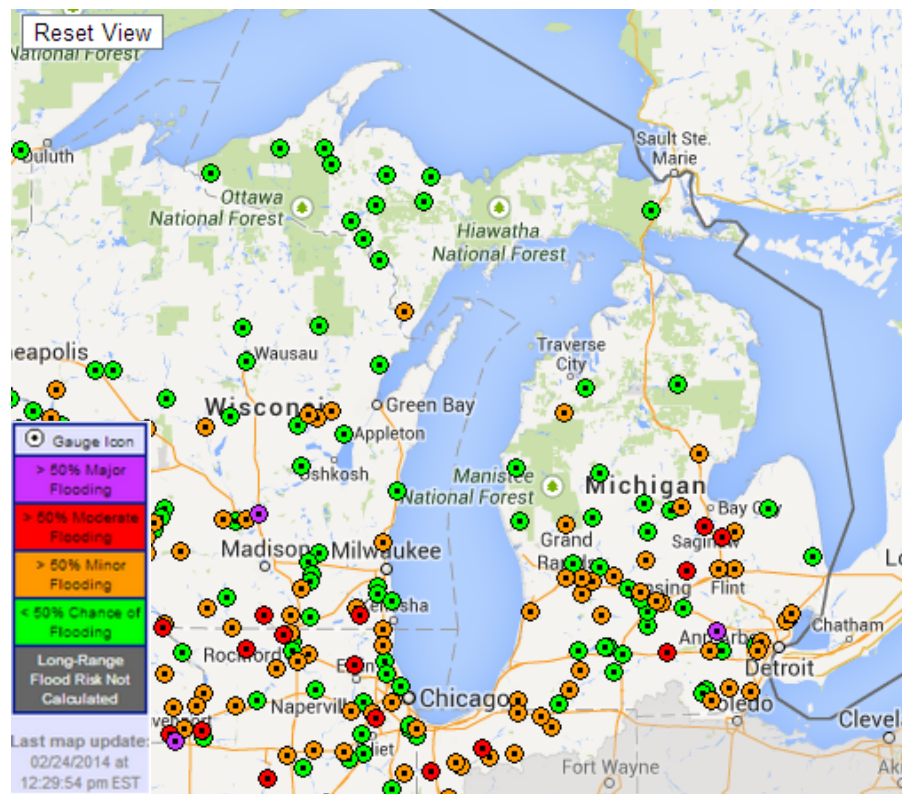




# For Additional Information



Map Showing 50% Chance or Greater of Exceeding  
River Flood Levels in Mar-Apr-May



Bookmark this map at - <http://go.usa.gov/BFT4>

## Forecasts and Warnings

<http://www.weather.gov>

## Latest River Stages

<http://water.weather.gov>



@NWSDetroit  
@NWSGrandRapds  
@NWSGaylord  
@NWSMarquette  
@NWSIWX (northern Indiana)



Search for  
National Weather Service  
'Office Location'

